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February 4, 2004

BY HAND AND/OR ELECTRONICALLY, AS NOTED

RECEIVED

FEB - 4 2004

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Marlene H Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W
Washington, D C. 20554

**Re: DA 03-3585, RM-10821; Wireless Telecommunications Bureau Seeks Comment On MariTEL, Inc. Petition for Declaratory Ruling and National Telecommunications and Information Administration Petition for Rulemaking Regarding the Use of MariTime VHF Channels 87B and 88B; NOTICE OF EX PARTE PRESENTATION; Filed By Hand and Electronically**

**PR Docket No. 92-257; Amendment of the Commission's Rules Concerning Maritime Communications; NOTICE OF EX PARTE PRESENTATION; Filed Electronically**

**ET RM-10743; Commission's Rules to Promote the Use of VHF Public Coast Station Frequencies; NOTICE OF EX PARTE PRESENTATION; Filed Electronically**

**DA 03-1484; MARITEL, Inc. Request to Extend Construction Deadline for Certain VHF Public Coast Station Geographic Area Licenses; NOTICE OF EX PARTE PRESENTATION; Filed by Hand**

Dear Ms. Dortch:

Pursuant to the provisions of Section 1.1206(b) of the rules and regulations of the Federal Communications Commission ("FCC"), this letter provides notice of a written *ex parte* communication from Jason Smith of MariTEL, Inc. ("MariTEL") to Catherine Seidel, D'wana Terry, Scot Stone, Jeffrey Tobias and Tim Maguire, all of the Wireless Telecommunications Bureau

In particular, Mr Smith provided these FCC officials with the attached letter, in which MariTEL proposes support, under certain conditions, of the shared government/non-government use of VHF channels 87B and 88B for Automatic Identification Service ("AIS") operations.

Should there be any questions regarding this matter, please contact the undersigned directly

Cordially yours,

Russell H. Fox

Attachment

cc (each electronically, w/attachment)
Catherine Seidel
D'wana Terry
Scot Stone
Jeffrey Tobias
Tim Maguire

WDC 344865v1


Catherine W Seidel
Deputy Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Dear Ms Seidel,

**Subject: MariTEL proposal to designate and share channels 87B and 88B for AIS**

## I. Introduction

As you are aware, the National Telecommunications and Information Administration ("NTIA"), on behalf of the United States Coast Guard ("USCG"), submitted a petition[1] ("NTIA Petition") to the FCC to designate VHF public coast station channels 87B and 88B ("the Channels") for Automatic Identification Systems ("AIS") on a shared government, non-government basis These channels are licensed to MariTEL through FCC auction. MariTEL desires to protect its licensed rights to the Channels and other frequencies affected by the use of AIS, yet quickly reach a resolution to the "AIS Frequency Controversy", and expeditiously make the benefits of AIS available to all maritime stakeholders Therefore, MariTEL proposes to support the NTIA Petition to designate the Channels exclusively for AIS in a manner that does not impair the use of both the Channels and other VHF Public Coast ("VPC") spectrum licensed to MariTEL

## II. Shared Government, Non-government

***The Channels shall be shared between the USCG, MariTEL and ship stations in the manner more fully described below.***

*Contribution of Spectrum Rights by MariTEL and the NTIA*

Subject to FCC rules established prior to Auction 20, MariTEL has an obligation[2] to make available up to (2) narrowband offset duplex channels to the USCG for ship-shore and shore-ship communications in the Ports and Waterways Safety System ("PAWSS")[3]. Additionally, FCC rules excluded channel 228B from the VPC auction and made it available on a nationwide basis to the USCG consistent with their request for its use by ship stations on a ship-ship basis In shaping the rules, the FCC considered,

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[1] *See* letter dated October 24, 2003 from Frederick R Wentland, Associate Administrator, Office of Spectrum Management, NTIA to John B. Muleta, Chief, Wireless Telecommunications Bureau, RM-10821

[2] MariTEL requests the FCC to waive its regulations as necessary to implement this proposal

[3] It is important to note that such use is fixed and predictable according to shore station locations, terrain, antenna height and effective radiated power.

*inter alia*, the International Telecommunications Union ("ITU") designation[4] of the Channels as AIS1 and AIS2 and also the FCC's policy to ensure VPC licensees have sufficient spectrum to construct wide area radio systems.

Considering the demand for AIS applications, the USCG's desire to quickly implement AIS carriage requirements absent a shore station infrastructure, and the need for AIS to operate using two channels, MariTEL proposes to share its licensed rights to channels 87B and 88B for use by ship stations[5] and the USCG[6] at no cost In return, the NTIA would authorize, consistent with their petition for shared government, non-government use, use of channel 88B solely for use by the USCG, MariTEL and ship stations for AIS Collectively, the Channels shall solely[7] be designated for AIS operations by ship stations, MariTEL[8] and the USCG near all major navigable waterways ("Maritime Areas")

*MariTEL and USCG Applications*

MariTEL proposes that the USCG be allowed to use the Channels in all Maritime Areas for shore station operations to support Vessel Traffic Services ("VTS") and surveillance applications for homeland security Such use would be confined to USCG VTS operations[9] and surveillance applications consistent with the Maritime Transportation Security Act of 2002 ("MTSA"). USCG use shall not be extended to other entities including, but not limited to, marine exchanges, port authorities, fleet operators, state and local government agencies, and non-USCG federal government entities. MariTEL will have the right to use the Channels in all Maritime Areas for shore station operations to support non-USCG AIS applications.

[4] Although channels 87B and 88B are designated by the International Telecommunications Union ("ITU") as AIS1 and AIS2 for use on a 25 kHz simplex basis, the recommendation provides that other channels may be used in either simplex or duplex mode and with either 25 kHz or 12 5 kHz bandwidth

[5] Includes both government and non-government ship stations.

[6] Unless authorized by MariTEL, the USCG shall be the only entity allowed to use AIS information received by a fixed, shore station AIS device.

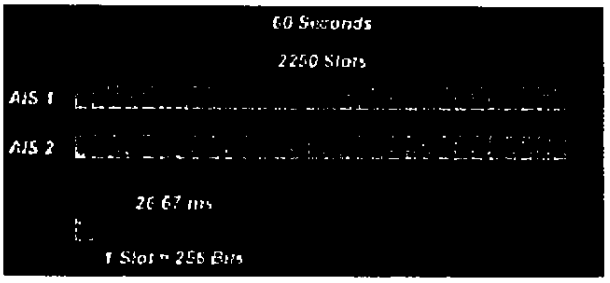
[7] Other channels may be used for AIS subject to written concurrence by the FCC, NTIA and MariTEL.

[8] Other entities may be authorized to use the Channels for shore station operations subject to concurrence from MariTEL MariTEL agrees to allow the St Lawrence Seaway Development Corporation ("SLSDC") and Canada to use the Channels consistent with the provisos described in this proposal.

[9] The purpose of a Vessel Traffic Service ("VTS") is to provide active monitoring and navigational advice for vessels in particularly confined and busy waterways. Eligible USCG VTS operations must include federal resources for, *inter alia*, the assortment of personnel, procedures, equipment, regulations, traffic separation, vessel movement reporting, a traffic center, liability and enforcement capability.

*Channel Loading and Time Slot Allocation*

Both the USCG and MariTEL can uniquely share AIS channels, unlike traditional sharing of maritime and public safety site-specific frequencies. AIS technology is based on the self-organizing time division multiple access ("SOTDMA") protocol that provides 4,500 time slots per minute across two channels that operate independently and in parallel for redundancy[10]




The USCG states that, "The SOTDMA broadcast mode allows the system to be overloaded by 400 to 500% through sharing of slots, and still provide nearly 100% throughput for ships closer than 8 to 10 NM to each other in a ship to ship mode. In the event of system overload, only targets further away will be subject to dropout, in order to give preference to nearer targets that are a primary concern to ship operators. In practice, the capacity of the system is nearly unlimited, allowing for a great number of ships to be accommodated at the same time."[11]

The preponderance of time slots is used for transmissions by ship stations with very limited use by shore stations. While VTS applications may require frequent shore station transmissions, industry experts have noted that non-VTS surveillance applications require very limited shore station transmissions and many have concluded it is acceptable only to receive ship station transmission information[12]

MariTEL proposes to share the Channels using channel loading and time slot allocation. MariTEL's use shall be constrained so as not to impair safety of navigation and homeland security by prioritizing USCG and ship station use Such constraints may be easily employed by the use of AIS technology that can assess the channel loading and time slot utilization in a given area and reduce transmissions to a predefined level of utilization. MariTEL proposes the sharing arrangement be codified as part of the FCC rules pursuant to further discussions with the FCC, NTIA, USCG and MariTEL.

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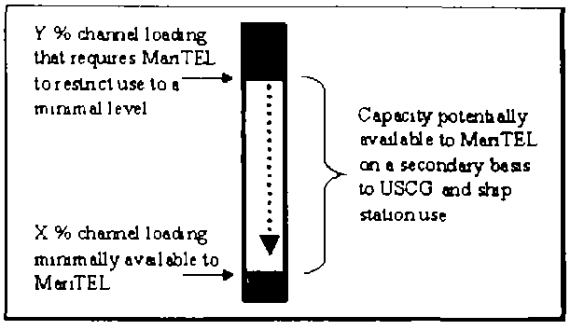
[10] The dual channel operation and frequent reporting interval make AIS a resilient solution in a high traffic environment Additionally, the frequent reporting interval helps compensate for the overly sensitive AIS receiver specification

[11] http //www navcen uscg gov/enav/ais/how_AIS_works htm

[12] Presentation made by LCDR Brian Tetreault, USCG, on November 19, 2003 in the AIS conference held at the Westin Hotel in Seattle, WA. The presentation depicts the daily number of different AIS units received at Miami/Dania, Fla. and Groton, Ct. listening stations.
http //www rhppublishing com/AIS%20Agenda html.

The example below, demonstration purposes only, shows how the Channels may be shared




MariTEL constrains its use of the time slots to X% when the VHF Data Link ("VDL") utilization in a given area exceeds Y%

## III. Modify FCC Requirements for AIS to Prevent Interference

***The FCC must modify the equipment acceptance requirements for AIS technology to prevent interference to other licensed MariTEL channels considering the recommendations more fully described below.***

MariTEL desires to support the NTIA Petition in a manner that effectively shares the Channels for simplex operations on shore station channels to enable AIS applications for the entire maritime industry In doing so, it must ensure that use of simplex AIS technology does not impair the use of other VPC channels. At issue is the introduction of simplex technology for operation on channels designated by the FCC as exclusively for duplex operations.[13]

Third party testing demonstrates that current FCC interim type acceptance rules for AIS devices[14] allow significant and widespread interference to adjacent maritime channels. This testing predicts that 25 kHz simplex operations on the Channels impair adjacent VPC channels, which precludes MariTEL from constructing wide area radio systems for maritime communications. The FCC should amend the interim type acceptance rules for AIS to eliminate interference to adjacent maritime channels. The following are two steps the FCC must take, at a minimum, prior to authorizing simplex AIS operations within the VPC band[15]

[13] In any instance, no marine VHF channels are authorized for 25 kHz simplex operations on the coast station frequency to prevent "floating" base stations that present a host of technical issues

[14] Operating in the simplex mode pursuant to the NTIA Petition.

[15] Conforming regulations should also be adopted to ensure that the paired channels 87A and 88A can be used in simplex operations by the entities now permitted to use them.

*Enhance IEC 61993-2 testing for US Operations*

The AIS technical community has discovered the need to update the IEC 61993-2 15 1.3 test whose goal is to insure that AIS devices adhere to the transmission mask limitations The current methodology is flawed and may allow AIS devices to successfully pass the test requirements while violating these emissions mask limits. This flaw may result in type-approved devices that exhibit significant and widespread interference to adjacent maritime channels

Efforts are underway within IALA to amend the current IEC test specification but a timeline for an updated test plan is unknown. In the interim, the FCC should supplement its interim type acceptance rules with a test that insures AIS devices operate within the specified emissions mask. The FCC should consider adopting a test specification similar to the 15.1.3 test within the draft IEC 62287 (Class B AIS) standard to insure AIS devices are properly tested

*Establish Simplex Rules for US Maritime Spectrum*

MariTEL recognizes the benefits of using the default AIS channels to expedite U S. carriage requirements and minimize the expense of switching vessels to alternate channels and/or modes of operation The international community identified the Channels for AIS presuming they would be the least likely to be assigned for other services on an international basis. However, 25 kHz simplex operations on the base station or "B-side" introduce a host of interference issues to VPC operations and the impact on adjacent licensed spectrum has not been addressed in FCC spectrum policy. At a minimum, the FCC should quickly establish parameters for AIS devices and ship borne installation guidelines so as to eliminate interference to adjacent duplex maritime channels licensed to MariTEL and others.

MariTEL is extremely concerned that communication with vessels ("shore-ship") within proximity of a simplex AIS device will be significantly impaired. Third party testing has demonstrated that current FCC type accepted AIS devices operating in the simplex mode could eliminate VPC communications to these vessels and impact VPC communications to other non-AIS equipped vessels within 35 miles of an AIS device[16]. MariTEL's ability to construct a wide area radio system for maritime services is significantly impacted by the current FCC interim type acceptance rules. Further, test results have demonstrated that the consistent "spiky" randomness of AIS interference is impossible to predict and negate with current technologies

To insure that simplex AIS interference is eliminated to adjacent VPC and other maritime channels, the FCC must suspend the interim AIS type acceptance process and promulgate Part 80 specifications establishing simplex rules for U.S maritime spectrum. The FCC should quickly amend the current interim type acceptance rules for AIS and establish ship borne installation guidelines that ensure full use of all maritime channels except those designated for AIS use.

[16] inCode study results show 35-mile impact to adjacent channel operations

MariTEL
The Marine Telephone Company

## IV. Conclusion

MariTEL proposes to support the NTIA Petition conditioned upon an agreement between the FCC and NTIA to share the Channels between the USCG, ship stations and MariTEL Support for the sharing arrangement is conditioned upon a determination by the FCC that MariTEL's other VPC channels will not be impaired due to 25 kHz simplex AIS operations on channels 87B and 88B We urge the FCC to move quickly in adopting appropriate measures to implement this proposal. Such action will facilitate rapid deployment of AIS, will expedite further development of AIS technologies and will permit MariTEL to make use of the channels for which it was the high bidder at FCC auction.

MariTEL continues to explore means by which important national security and safety requirements may be met while preserving MariTEL's use of its licensed spectrum We look forward to working with you and your staff to address this matter further.

Sincerely,

Dan Smith
President & CEO

cc: D'wana Terry (by e-mail)
Scot Stone (by e-mail)
Tim Maguire (by e-mail)
Jeffrey Tobias (by e-mail)